

In the Claims:

Claims 1-28 have been examined.

Claims 1-5, 7-24 and 26-27 amended here as follows:

1. (currently amended) A method of fabricating microdevices on from a workpiece, comprising the steps of:

- a) illuminating a single column of microdevice cells on a mask with pulses of radiation; and
- b) continuously moving the workpiece in a direction perpendicular to a long axis of the column of microdevice cells on the mask during illumination of the mask; and

coordinating the movement of the workpiece with the timing of the pulses of radiation to pattern patterning the workpiece with images of the illuminated single column of microdevice cells on the mask to form corresponding adjacent columnar exposure fields on the workpiece by continuously moving the substrate in the direction perpendicular to the long axis of the columnar exposure fields during illumination of the mask so that with each columnar exposure field on the workpiece is formed by a single pulse of radiation.

2. (currently amended) The method according to claim 1, further including the step of collecting with a projection lens the portion of the pulses of radiation transmitted by the single column of microdevice cells on the mask to be imaged on the workpiece.

3. (currently amended) The method according to claim 2 further including the step of aligning the substrate workpiece relative to the an image of the mask produced by the projection lens.

4. (currently amended) The method according to claim 1, wherein the

step of illuminating the mask with pulses of radiation includes the step of providing the radiation from a pulsed radiation source or a modulated continuous-wave radiation source.

5. (currently amended) The method according to claim 2, wherein the mask has a first width and the single column of microdevice cells on the mask has a second width that is 10% or less than the mask first width.

6. (original) The method according to claim 1, wherein the mask contains a single column of microdevice cells.

7. (currently amended) The method of claim 1, wherein:
the mask contains multiple columns of microdevice cells; and
the step of illuminating the mask further includes including the step of adjusting the illumination to illuminate only a single column of microdevice cells.

8. (currently amended) The method of claim 7, wherein the step of adjusting illumination further includes the step of including adjusting an illumination field aperture to illuminate only a single column of microdevice cells.

9. (currently amended) The method according to claim 1, wherein each of the exposure field fields has a width-to-length aspect ratio of between about 1:10 and 1:50.

10. (currently amended) The method according to claim 1, wherein each of the microdevice microdevices is a thin-film read/write head.

11. (currently amended) The method according to claim 1, further including includes the step of forming multiple rows of columnar exposure fields by

~~moving the workpiece over a scan path that includes stepping the workpiece in a direction parallel to the direction of a columnar exposure field by at least a columnar exposure field length to form multiple rows of columnar exposure fields.~~

12. (currently amended) The method according to claim 1, wherein each of the microdevice cells each include includes an electrical test structure to assist in controlling a lapping operation.

13. (currently amended) The method according to claim 12, wherein: each of the microdevice microdevices is a thin-film head with a throat; and including performing the method further includes the step of lapping operation so as the microdevices to define a length of the a throat thereof.

14. (currently amended) A method of patterning a workpiece using with a lithographic system to form microdevices on the workpiece in a manner that reduces colinearity effects, comprising the steps of:

supporting a mask having at least one column of microdevice cells formed thereon;

illuminating one of the at least one column on the mask with pulses of radiation; and

collecting the radiation transmitted by the illuminated column on the mask with a projection lens; and

exposing a single columnar exposure field with each pulse of the pulses of radiation as the workpiece moves is moved continuously at a speed coordinated with the radiation pulses moving the workpiece over a scan path normal to the direction of the column of microdevice cells on the mask direction so as to form a row of adjacent single columnar exposure fields on the workpiece.

15. (currently amended) The method of claim 14, wherein in the

exposing step each single columnar exposure field is formed by a projection lens, with the single columnar exposure field having a width of about 10 % or less than the maximum field width capability of the projection lens.

16. (currently amended) The method according to claim 14, wherein the at least one column on the mask has a width-to-length aspect ratio in the range from of about 1:10 to about 1:50.

17. (currently amended) The method of claim 14, wherein: the mask contains multiple columns of microdevice cells; and the illuminating step includes including the step of adjusting the illumination to illuminate only a single column of microdevices microdevice cells.

18. (currently amended) The method according to claim 14. 17, wherein the step of adjusting the illumination is achieved by includes the step of adjusting an illumination field stop.

19. (currently amended) The method according to claim 14 17, wherein the step of adjusting the illumination is achieved by includes the step of adjusting illumination system elements that concentrate concentrating the illumination into the desired long, narrow area occupied by a single column of devices on the workpiece.

20. (currently amended) A method of patterning a workpiece using with a lithographic system in forming to form microdevices on the workpiece in a manner that reduces colinearity effects, comprising the steps of:

supporting a mask having at least one column of microdevice cells formed thereon;

illuminating one of the at least one column on the mask with pulses of radiation;

collecting the radiation transmitted by the illuminated column on the mask with a

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projection lens; and

forming a single columnar exposure field on the workpiece with one or more pulses of radiation; and

forming a row of adjacent single columnar exposure fields by stepping the workpiece by a width of a microcircuit device pattern between exposures.

21. (currently amended) The method according to claim 20, including further including the steps of:

providing the pulses of radiation in bursts of two or more pulses; and
stepping the workpiece between bursts.

22. (currently amended) The method according to claim 20, wherein the mask has a first width and the a single column of microdevice cells has a second width that is about 10% or less of the mask first width.

23. (currently amended) The method according to claim 20, further including the step of slicing the workpiece to form row-bars of microdevice units that contain a single device from many successive columns.

24. (currently amended) A system for patterning to pattern a workpiece to form microdevices on the workpiece in a manner that reduces colinearity effects, comprising:

- a) a radiation source for providing to provide pulses of radiation;
- b) a radiation source controller in operation communication with said radiation source for controlling to control the emission of the radiation pulses from said radiation source;
- c) an illuminator arranged to receive pulses of radiation from said radiation source and illuminate a single column of microdevice cells on a mask;
- d) a projection lens arranged to receive pulses of radiation passing through

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the mask and adapted to form a columnar exposure field of microdevice units on the workpiece that corresponds correspond to the column of microdevice cells on the mask;

e) a workpiece stage capable of supporting to support and move the workpiece and moving the workpiece over a scan path relative to the projection lens and in a direction normal to the projected direction of the column columnar exposure field on the workpiece; and

f) a workpiece stage position control unit in operable communication with said workpiece stage and in communication with the radiation source control unit, wherein said workpiece stage position control unit controls to control the movement of said workpiece stage over said scan path such that a single pulse of radiation forms a single columnar exposure field on the workpiece, with temporally adjacent radiation pulses forming adjacent columnar exposure fields.

25. (original) The system according to claim 24, wherein the illuminator has an associated illumination field, and the width of the column of microdevice cells is about 10% or less than the length of the column.

26. (currently amended) The system according to claim 24, wherein the workpiece stage includes is a magnetically levitated stage.

27. (currently amended) The system according to claim 24, wherein the workpiece stage includes is an air bearing stage.

28. (original) The system according to claim 24, further including a pulse stabilization system arranged downstream of said radiation source.